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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,618	02/11/2005	Egidio Berwanger	04306/0202213-US0	9426
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DARBY & DARBY P.C. P.O. BOX 770 Church Street Station New York, NY 10008-0770			EXAMINER WEINSTEIN, LEONARD J	
			ART UNIT	PAPER NUMBER
			3746	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/519,618	Applicant(s) BERWANGER ET AL.	
	Examiner LEONARD J. WEINSTEIN	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 11, 2008 has been entered.
2. The examiner acknowledges the amendments to claims 1, 6-7, and 12. The examiner notes that independent claim 13 has been introduced by the applicant in the submission of February 11, 2008.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 12 recites the limitation "the hermetic compressor" in line. There is insufficient antecedent basis for this limitation in the claim. The as best understood by the examiner the applicant has disclosed an invention for an improvement for a hermetic compressor but as claim 12 stands the limitations of the compressor being hermetically sealed was not presented in claim 1 from which claims 12 depends. The examiner will consider the limitation to be --- the linear compressor --- as presented in the preamble of claim 1.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-10 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi et al. WO/0188373 in view of O'Connor US 3,705,342, as evidenced by Brunau et al. 3,312,173. Choi teaches all the limitations as claimed for a resonant arrangement for a linear compressor including: **[claims 1 and 13]** a non-resonant assembly 1 formed by a motor, elements 4A and 4B, and a cylinder 3, a resonant assembly (fig. 4) formed by a piston 6 reciprocating inside the cylinder 3, the cylinder 3 being closed by a cylinder head 8 defining between a top portion of the piston 6 and said cylinder head 8 a compression chamber, area above suction valve element 9 of piston 6 and below cylinder head element 8 as shown in figure 3, an actuating means 5 coupled to the bottom portion of the piston 6 operatively coupling the piston 6 to the motor, elements 4A and 4B, and at least one spring means 7A,

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mounted to the actuating means 5 and which is elastically and axially deformed toward the displacement of the piston 6, wherein the spring means 7A presents an elongated tubular body, which is coaxial in relation to the axis of the piston 6 and has an end operatively coupled to the actuating means 5 and an opposite end, end connected to element 12 of non-resonant assembly 1, operatively coupled to the non-resonant assembly 1, said tubular body, as formed by element 7A, extending from the end operatively coupled to the actuating means 5 to the opposite end, end of element 7A communicating with element 12, said tubular body, as formed by element 7A, having circumferential sectors, coil element of the spring of element 7A, that are symmetric in relation to the axis of said tubular body, as collectively formed by the coils of spring element 7A, each circumferential sector being elastically deformed in the axial direction upon displacement of the piston 6; **[claim 12]** the linear compressor comprises a hermetic shell (V) , inside which are mounted the resonant 1 and the non-resonant assemblies (fig. 4), wherein it comprises another spring means 7B in the form of a tubular body, as formed collectively by the series of coils comprising element 7B, which is coaxial in relation to the axis of the piston 6 and having an end affixed to the actuating means 5 and the other end affixed to the shell, via elements 2 and the mounting means shown in figure 3 affixing elements 1 and 2 to (V), said tubular body, as formed collectively by the series of coils comprising element 7B, having circumferential sectors, individual coils of element 7B, that are symmetric in relation to the axis of said tubular body, as formed collectively by the series of coils comprising element 7B, each circumferential sector, an individual coil of element 7B, being elastically deformed in the axial direction upon displacement of the piston 6.

Choi fails to teach the following limitations for a spring means for a linear compressor that are taught by O'Conner including: **[claim 1]** a spring means 12 providing a tubular body (fig. 3) providing a tubular wall, as shown in figures 4 and 5, (figs. 4 and 5), extending from an

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end of an actuating means 36 of a resonant assembly, as defined by elements 12, 28 and 36, to an opposite end coupled to a non-resonant assembly, pump head defining pump chamber 14 and providing flanged connection for upper section of element 12, said tubular body (fig. 3) having at least part of an extension thereof folded in circumferential sectors, as defined by elements 50 and 52, that are symmetric in relation to the tubular body (fig. 3) and elastically deformed in an axial direction upon displacement of a piston (actuating means 28); **[claim 2]** the circumferential sectors, as defined by elements 50 and 52, present the same cross section profile; **[claim 3]** a resonant arrangement, as defined by elements 12, 28, and 36, characterized in that each circumferential sector, as defined by elements 50 and 52, presents a substantially "V" shaped profile, as shown in figure 4, each circumferential sector, as defined by elements 50 and 52, being elastically deformed by variation of its respective dihedral angle; **[claim 4]** a resonant arrangement characterized in that the circumferential sectors, as defined by elements 50 and 52, present the same dihedral angle, clearly shown in figure 4; **[claim 5]** a resonant arrangement having circumferential sectors, as defined by elements 50 and 52, are orthogonal to the longitudinal axis of a tubular body (fig. 3); **[claim 6]** a resonant arrangement having tubular body (fig. 3) providing the tubular wall, as shown in figures 3 and 4, presents a non-hollow lateral surface extending from the end operatively coupled to the actuating means 28 to an opposite end coupled to a non-resonant assembly, pump head defining pump chamber 14 and providing flanged connection for upper section of element 12; **[claim 7]** a fixation of each end of the tubular body (fig. 3) to the adjacent part defined by a cylinder, pump head, and the actuating means 28 is obtained by one of the processes of welding, gluing and screwing, via element 30; **[claim 8]** a tubular body (fig. 3) having each one of an ends defined by a respective tubular extension, as defined by elements 42 and 44 as shown in figure 3 extending from a topmost and bottommost section respectively, not presenting the

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circumferential sectors, as defined by elements 50 and 52, and dimensioned to provide a fitting to the respective part to which it is affixed, as can be seen in figure 1; **[claim 9]** a resonant assembly wherein each part to which is affixed an adjacent end of the tubular body (fig. 3) is provided with at least one circumferential tooth, as defined by elements 42 and 44, which is coaxial to the axis of a piston 28 for fitting said respective end; **[claim 10]** each circumferential tooth, elements 42 and 44, being continuous; **[claim 13]** and a tubular wall (fig. 3) operable to prevent fluid communication through a wall, as shown in figure 4, extending from an end operatively coupled to an actuating means 36 and a tubular body (fig. 3) having an extension thereof folded in circumferential gores, as defined by elements 50 and 52, that are symmetric in relation to the axis of the tubular body (fig. 3) and being elastically deformed in an axial direction upon displacement of a piston 28.

O'Conner teaches the general shape of a spring means as claimed for a linear pumping apparatus however Brunau teaches a more analogous structure for a linear pumping apparatus as that which is disclosed in the instant application where the spring means (bellows element 13 of Brunau) is directly attached to a electromagnet and houses a plunger 7. Brunau teaches that it is advantageous to use a bellows in a linear pumping apparatus to protect and electromagnet from a fluid being pump. A modification of providing a bellows type spring means as taught by O'Conner as substitute for the springs 7A and 7B of Choi would teach the limitations as discussed above and include the limitations of the claim 12. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify a linear compressor having a motor with and magnet, as taught by Choi, with a bellows type spring means, as taught by both O'Conner and Brunau, in order to provide a means for protecting a motor from a fluid being pumped or compressed (Brunau – col. 2 ll. 5-9).

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10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Choi et al. WO/0188373 in view of O'Connor US 3,705,342, as evidenced by Brunau et al. 3,312,173, as applied to claim 1 above, further in view of Brunau 3,312,173. A combination of the references teaches the limitations as discussed and including, with the incorporation of Brunau, the following limitation for tubular body, as formed by element 13, having an end hermetically affixed to a cylinder 9 and the opposite end hermetically affixed to the actuating means 5, in order to block the fluid communication with a chamber 4. Brunau teaches that it is advantageous to use a bellows in a linear pumping apparatus to protect and electromagnet from a fluid being pump. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify both spring means as attached to an actuating means of a linear compressor having a motor with a magnet, as taught by Choi, with a bellows type spring means, as taught by both O'Conner and Brunau, in order to provide a means for protecting a motor from a fluid being pumped or compressed (Brunau – col. 2 ll. 5-9).

Response to Arguments

11. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD J. WEINSTEIN whose telephone number is (571)272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art Unit
3746

/Leonard J Weinstein/
Examiner, Art Unit 3746